

Question	Answer
15.	$L'(-1.5, 6)$, $M'(-6, 6)$, $N'(-6, 4.5)$ This is a dilation with scale factor 1.5 and center $(0, 0)$.
17.	$N'(0, -1)$, $O'(-1, 5)$, $P'(1, 5)$ This is a translation 1 unit left and 1 unit up.
19.	Yes, the figures are congruent because $JKLM$ can be mapped to $ABCD$ by a clockwise rotation of 90° about $(0, 0)$.
21.	Yes, the triangles are congruent because triangle EFG can be mapped to triangle UVW by a translation: $(x, y) \rightarrow (x, y + 3)$.
23.	The triangles are congruent because triangle ABC can be mapped to triangle $A'B'C'$ by a rotation: $(x, y) \rightarrow (y, -x)$, and then triangle $A'B'C'$ can be mapped to triangle DEF by a translation: $(x, y) \rightarrow (x - 2, y)$.
24.	The triangles are congruent because triangle PQR can be mapped to triangle $P'Q'R'$ by a translation: $(x, y) \rightarrow (x + 3, y)$, and then triangle $P'Q'R'$ can be mapped to triangle GHI by a rotation: $(x, y) \rightarrow (-x, -y)$.
28.	He rotated the design 180° clockwise about the lower left corner. Then he translated the image to the right and up. The two black shapes are congruent.
30.	$X'(-6, 3)$, $Y'(-3, 12)$, $Z'(3, 9)$ This is a dilation of scale factor 3 and center $(0, 0)$. Then a rotation 90° counterclockwise about $(0, 0)$.
31.	Starting in the upper left, Frank reflected his shape horizontally. Then he rotated 90° counterclockwise and translated it to the right and up. Then he reflected it vertically. This whole row he then rotated 180° and translated down.
33.	Dave is correct because the triangle was reflected, not rotated.

Question	Answer
34.	When you reflect a polygon, you use $(x, y) \rightarrow (-x, y)$ to reflect across the y -axis and $(x, y) \rightarrow (x, -y)$ to reflect across the x -axis. When you rotate a polygon, you use $(x, y) \rightarrow (y, -x)$; to rotate 90° clockwise about $(0, 0)$, $(x, y) \rightarrow (-y, x)$; to rotate 90° counterclockwise about $(0, 0)$ and $(x, y) \rightarrow (-x, -y)$; to rotate 180° about $(0, 0)$; For the 90° rotations, the x and y values are interchanged, which does not occur when reflecting a polygon.
35.	The dilation of the figure with a scale factor of 2 will be 4 times as large as the figure with a scale factor of 0.5. A scale factor of 2 increases the figure to twice its original size. A scale factor of 0.5 decreases the figure to half its original size.
36.	B
37.	D